

**Levco Metals Property
Draft Upland Site Summary**

LEVCO METALS PROPERTY (DAR SITE ID #131)

Address: 34 – 11 36th Street, Long Island City, New York 11106-1228
(Also known at 34 – 20 37th Street)

Tax Lot Parcel(s): Queens Block 644, Lot 43

Latitude: 40.757123

Longitude: -73.923324

Regulatory Programs/
Numbers/Codes: USEPA ID No. NYD001316777, AFS No. 3608100674, TRI No.
11106LVCMT34113, NYSDEC Spill No. 8607571, HWS No.
241-009, PBS No. 2-090360, VCP No. V00600

Analytical Data Status: ☐ Electronic Data Available ☒ Hardcopies only
☐ No Data Available

**1 SUMMARY OF CONSTITUENTS OF POTENTIAL CONCERN (COPCs) TRANSPORT
PATHWAYS TO THE CREEK**

The current understanding of the transport mechanisms of contaminants from the upland portions of the Levco Metals Property site (site) to Newtown Creek is summarized in this section and Table 1, and is supported in the following sections.

Overland Transport

The site is located approximately 1.3 miles from the Dutch Kills waterway (a tributary of Newtown Creek) with several buildings and thoroughfares between the site and the waterway. The site is 1.3 miles from Newtown Creek and associated waterways. This is not a complete current or historical pathway.

Bank Erosion

The site is not adjacent to Newtown Creek or associated waterways. This is not a complete current or historical pathway.

Groundwater

The site is 1.3 miles from Newtown Creek and associated waterways. According to the 1995 Proposed Remedial Action Plan, there is a groundwater plume on the central portion of the

site between 36th and 37th Street (NYSDEC 1995). Groundwater at the site flows to the southwest toward the East River. This is not a complete current or historical pathway.

Overwater Activities

The site is not adjacent to Newtown Creek or associated waterways. Information regarding overwater activities was not identified in documents available for review. This is not a complete current or historical pathway.

Stormwater/Wastewater Systems

This site is within the Bowery Bay WPCP sewershed (NYCDEP 2007). Information regarding on-site stormwater and wastewater infrastructure and management were not identified in documents available for review. There is insufficient evidence to make a current or historical pathway determination for direct discharge of stormwater and wastewater or discharge to sewer/ CSO.

Air Releases

An air sparging/soil vapor extraction system (AS/SVE) system installed on the site in 2003 to address elevated levels of VOCs found in soil and groundwater at the site (Gannett Fleming 2006). In 2010, the AS/SVE system was deemed ineffective and was discontinued (Cozzy 2010). Additional information regarding air emissions from the site was not identified in documents available for review. There is insufficient evidence to make a current or historical pathway determination.

2 PROJECT STATUS

Based on the presence of elevated levels of 1,1,2-trichloroethylene (TCE) groundwater underlying the site, the site is listed on the New York State Environmental Site Remediation Database as a “Class A” VCP site (i.e., a non-registry site in any remedial program where work is underway and not yet complete). The site was listed on the New York State Registry of Inactive Hazardous Waste (HW) Sites (HW No. 2-41-009) as a Class 2 Site in November 1989 but is now delisted from the Registry. A summary of investigation and remedial activities at the site is provided in the following table:

Activity		Date(s)/Comments
Phase 1 Environmental Site Assessment	<input type="checkbox"/>	Environmental Site Assessment: 1987, 1988
Site Characterization	<input type="checkbox"/>	
Remedial Investigation	<input checked="" type="checkbox"/>	Phase II Investigation: 1992 Supplemental Site Investigation: 1994 Groundwater sampling: 1992, 1995, 1996-2001 (semi-annual)
Remedy Selection	<input checked="" type="checkbox"/>	Consent Order: 1990 Voluntary Cleanup Agreement: entered to on 2002, commenced in 2005 and was revised in 2010.
Remedial Design/Remedial Action Implementation	<input checked="" type="checkbox"/>	Building Decommissioning/Hazardous Material Removal: 1991 Interim Remedial Measure (IRM): 1993 Phase III Investigation/Excavation: 1994 Remedial Action Work Plan: 2005, 2010
Use Restrictions (Environmental Easements or Institutional Controls)	<input checked="" type="checkbox"/>	July 28, 2010 letter from the NYSDEC states that an "environmental easement" will be implemented as part of the Remedial Action Work Plan to restrict use of groundwater (NYSDEC 2010). It is unknown if and when the proposed easement has been implemented.
Construction Completion	<input type="checkbox"/>	
Site Closeout/No Further Action Determination	<input checked="" type="checkbox"/>	Record of Decision: March 1996, recommended delisting the site from the Registry of Inactive Hazardous Waste Disposal Sites (the Registry)

Note:

NYSDEC – New York State Department of Environmental Conservation

- NYSDEC Site Code(s): IHWDS No. 241009, VCP No. V00600
- NYSDEC Site Manager: Vadim Brevdo and Bob Filkins

3 SITE OWNERSHIP HISTORY

Respondent Member:

☐ Yes ☒ No

Owner	Years	Occupant	Types of Operations
Unknown	1914 – unknown	New York Telephone Company	Storage warehouses

Owner	Years	Occupant	Types of Operations
Unknown	ca. 1937 – unknown	Consolidated Edison Company of New York, Inc.	Unknown
Unknown	ca. 1943 – unknown	East River Gas Company	Customer Service Department
Winston 36th Street Corporation	ca. 1950 – 1986		
	ca. 1950 – 1990	Levco Metal Finishers, Inc.	Plating, anodizing, and spraying
George S. Kaufman	1986 – ca. 2002		Parking lot
	ca. 2002 - present		

Note:

ca. – circa Additional discussion and sources provided in Section 6.

4 PROPERTY DESCRIPTION

The property occupies approximately 0.5-acre located 1.3 miles from Newtown Creek and associated waterways. The site is approximate 40 feet above mean sea level. The site and surrounding are flat as shown on Figure 1. The entire site is paved. Site maps are presented at Attachments 1 and 2. The property is bounded to the north and south by commercial buildings, to the east by residential dwellings, and to the west, a film and recording studio, Kaufman Astoria Studios. The area is zoned as a Manufacturing District, M1-5 (New York City Department of Planning 2011a). M1 districts are designated for areas with a significant number of residential buildings (NYC DCP 2011b).

5 CURRENT SITE USE

The site is currently paved with an asphalt surface and used as a parking lot for adjacent tenants. No structures currently exist on the property. Plans for construction of a new building at the site are pending (D&B 2010).

6 SITE USE HISTORY

In 1917, the New York Telephone Company owned the property with two storage warehouses: one on Blackwell Street (currently 36th Street) and one on Pomeroy Street (currently 37th Street). Available records did not indicate what was stored at these locations. The center of the property was a paved court (Sanborn 1917).

By 1943, The East River Gas Company Customer Service Department occupied the site. Two gas tanks were close to 7th Avenue (formerly Blackwell Street and currently 36th Street) and two warehouses were still in the same locations (Sanborn1943).

Around 1950, Levco Metal Finishers, Inc. (Levco) began manufacturing metal novelties on the site. They conducted plating and casting of white metal for lamps and novelty trade (Chamber of Commerce 1950). Years later, Levco described their business as sulfuric anodizing, chromic, hard coating, spraying, polishing, and plating (Chamber of Commerce 1969). By 1983, Levco occupied a 22,500 square foot facility for spraying, anodizing, and plating metals (State of New York 1983). Levco ceased operations in 1990. The one story structure was demolished (NYSDEC 2003b).

7 CURRENT AND HISTORICAL AREAS OF CONCERN AND COPCs

The current understanding of the historical and current potential upland and overwater areas of concern at the site is summarized in Table 1. The following sections provide brief discussion of the potential sources and COPCs at the site requiring additional discussion.

Areas of concern at the site include two storage buildings, two gas tanks, products used in metal finishing practices and operations (including sulfuric anodizing, chromic, hard coating, spraying, polishing and plating), equipment used in metal finishing practices and operations (including a concrete sump area), and one aboveground and one underground storage tank (AST and UST). The COPCs associated with these areas include VOCs, chlorinated VOCs, organic solvents, semi-volatile organic compounds (SVOCs), metals, petroleum hydrocarbons and polycyclic aromatic hydrocarbons (PAHs).

7.1 Uplands

Historic sources of COPCs at the site are identified to originate from metal finishing operations using hazardous materials including inorganic acids and their salts, and organic solvents. Various site investigations conducted at the site have implemented soil borings, monitoring wells, and various soil vapor monitoring and extraction wells, or a combination thereof (see Attachments 1, 2 and 3). Remedial measures have revealed the presence of chlorinated hydrocarbons and heavy metals in soil and groundwater. COPCs associated with

operations at the site include cis-1,2 –dichloroethane (cis-1,2-DCE), 1,1-dichloroethene (1,1-DCE), 1,1-dichloroethane (1,1-DCA), 1,1,1-trichloroethane (1,1,1-TCA), TCE, cadmium, chromium, lead, and selenium (NYSDEC 2003a).

The primary area of concern at the site includes the former sump area located in the southeastern portion of the former metal finishing building (see Attachment 3). Previous investigations revealed a VOC plume believed to originate from past discharges of liquid chemicals and waste into the sump (Levco Woodwork Joint Venture 2002). The VOC plume included elevated levels of TCE as well as cadmium and chromium contamination. These chemicals were present in the groundwater and were found to be moving off-site via groundwater flow (NYSDEC 1996). An Internal Remedial Measure (IRM) was implemented in 1993 to remove impacted material from the sump (Levco Woodwork Joint Venture 2002).

The former one-story brick building used for metal finishing practices was constructed on a slab of concrete except for a 500 square foot basement at the northwestern end of the building. The basement included a boiler and aboveground storage tank (AST) used to store fuel oil. When the building was decommissioned in 1991, approximately 36,288 gallons of hazardous waste liquids, 38 lab-packs of small containers holding hazardous waste (less than one gallon each), and 90 cubic yards of hazardous waste solids (i.e., woodchips, wood, and debris) were all manifested and removed (NYSDEC 1996; Levco Woodwork Joint Venture 2002). Additionally, asbestos was identified in the boiler room prior to decommissioning of the building (Geraghty & Miller 1995).

The site is a registered petroleum bulk storage (PBS) facility (PBS No. 2-090360; NYSDEC 2012). One 5,000-gallon UST is identified under PBS No. 2-090360 as in service for No. 2 fuel oil storage.

The site has historically been classified a Resource Conservation and Recovery Act (RCRA) large quantity generator (LQG) and non-generator in 1987 and 1990, and 1999 and 2006, respectively (EDR 2010). The site was most recently classified a non-generator; however, available documents have not been updated since 2007 (EDR 2010). The site has on file...

7.2 Overwater Activities

This site is not adjacent to Newtown Creek or associated waterways. Information regarding overwater activities was not identified in documents available for review.

7.3 Spills

Reported spills at the site are summarized in the following table¹:

NYSDEC Spill No.	Spill Date	Close Date	Material Spilled	Remarks
8607571	02/28/87	03/30/87	Unknown	Notified of contamination by consultant for property owner

Notes:

NYSDEC – New York State Department of Environmental Conservation

TCE – 1,1,2-trichloroethylene

8 PHYSICAL SITE SETTING

8.1 Geology

In general, the geologic setting of Newtown Creek area consists of Quaternary glacial deposits overlying Paleozoic gneiss and schist bedrock (Misut and Monti 1999). The contact between the glacial deposits and bedrock slopes rather steeply to the southeast, ranging in depth from less than 50 feet below ground surface (bgs) near the mouth of Newtown Creek to over 200 feet bgs at the eastern portions of the historical data review area. The near surface geology is of most interest relative to potential groundwater transport pathways from upland sites to the creek. In most areas, a heterogeneous anthropogenic fill unit of variable thickness (generally less than 20 feet thick) immediately underlies the surface. Beneath the fill in most areas are complex upper glacial deposits of Late Pleistocene age consisting of ablation till, outwash, and glaciolacustrine sediments. In some areas near Newtown Creek, a shell-bearing gray silt unit is present beneath the fill; this silt may represent post-glacial intertidal sediments deposited in wetlands adjacent to the creek prior to filling in the 1800s. An extensive sequence of regionally significant glacial units underlies the upper glacial deposits in areas where bedrock is deeper (Misut and Monti 1999).

¹ Information gathered from the EDR DataMap™ Environmental Atlas™ (EDR 2010).

Geologic conditions at the site have been characterized to depths 50 feet bgs. A 2002 investigation report described observed site lithology from the ground surface downward as follows (Levco Woodwork Joint Venture 2002):

- Fill material from 0 to 4 feet bgs
- Medium to fine sand with some silty material from 4 to 20 feet bgs
- Coarse sand with traces of gravel from 20 to 50 feet bgs
- Bedrock 50 feet bgs

A total of 16 soil borings (12 were converted to monitoring wells) and 19 monitoring wells were installed to investigate the subsurface of the site. Attachments 2 and 3 present the soil boring and monitoring well locations at the site. Attachments 4, 5, and 6 show hydrogeological cross sections that run from east to west through the site.

8.2 Hydrogeology

Hydrogeologic conditions at the site have been characterized for the unconfined groundwater unit at an average depth of 16 feet bgs (Levco Woodwork Joint Venture 2002). Generally shallow unconfined groundwater flow at the site is to the southwest toward the East River.

Groundwater elevations at the site have been measured in a network of monitoring wells using depth to water field measurements in relation to a known surveyed reference point (e.g., top of casing). The groundwater zone is dominated by a layer of medium to fine sand with some silty material to approximately 20 feet bgs and coarse sand with traces of gravel below 20 feet bgs. The groundwater beneath the site is not a current source of drinking water in the Astoria section of Queens (Levco Woodwork Joint Venture 2002). The hydraulic gradient of the water table is relatively flat (approximately 3.125×10^{-4} feet per foot). Measurements from groundwater monitoring well clusters indicate a negligible vertical head gradient in the upper 25 feet of the saturated zone (Levco Woodwork Joint Venture 2002).

Monitoring well locations are shown in Attachments 1, 2, and 4. Attachment 7 shows water-level elevations and groundwater flow directions from a November 22, 1994 investigation.

9 NATURE AND EXTENT (CURRENT UNDERSTANDING OF ENVIRONMENTAL CONDITIONS)

9.1 Soil

Soil Investigations

☒ Yes ☐ No

Bank Samples

☐ Yes ☐ No ☒ Not Applicable

Soil-Vapor Investigation

☒ Yes ☐ No

9.1.1 Soil Investigations

Multiple soil investigations at the site were conducted between 1987 and 1994. In 1987, soil samples were collected from four boring locations to characterize soil lithology. In April 1990, a Consent Order was executed between New York State Department of Environmental Conservation (NYSDEC) and the potentially responsible parties (PRPs) named as the Levco-Woodwork Joint Venture, Levco Associates, and Woodwork Display Astoria Investors, requiring the PRPs to implement a Phase II Investigation Program. The Phase II Investigation, conducted in 1992, was intended to delineate the extent of VOCs present in groundwater. The investigation included 13 soil borings, 9 of which were converted to monitoring wells, up to 48 feet bgs. The highest concentrations of VOCs were identified to exist in soil and groundwater samples closest to the main sump at the northwestern-most corner of the former one-story building (Levco Woodwork Joint Venture 2002). Non-aqueous phase liquids (NAPLs) were not detected in the soil or groundwater samples collected at the site. The absence of NAPL is further supported by relatively low concentrations of dissolved VOCs found in the groundwater at the site (Geraghty & Miller 1995).

Between September and November 1993, an IRM was implemented to remove “soil-borne” contaminants from the concrete sump beneath the floor of the former one-story building, which is believed to have held VOC-containing liquids (Applied Environmental 1993). In October 1994, the Phase III excavation and removal of VOC contaminated soils was implemented at the sump. Approximately 14 cubic yards of soil was removed from the sump and in November 1994, the sump was backfilled with clean fill and all associated sump piping

was properly sealed (Levco Woodwork Joint Venture 2002). Attachment 3 shows a schematic of sump excavation and closure sample locations (Geraghty & Miller 1995).

In November 1994, a supplemental site investigation (SSI) was conducted following the IRM. Three soil borings were drilled (and subsequently converted into monitoring wells) and were analyzed for VOCs and specific metals. The SSI concluded that the hazardous waste had been identified and removed from the site and that the remaining contamination in the soil above and beneath the groundwater table will not adversely affect public health and the environment due to the lack of environmental receptors in the vicinity of the site (Levco Woodwork Joint Venture 2002). Following the SSI, a Record of Decision (ROD) was released stating “no further action” for soil and monitoring of the groundwater on the site for 18 months on a semiannual basis. The site was subsequently deactivated from the Registry (ID: 2-41-009; NYSDEC 1996).

The following table contains a summary of detected concentrations of VOCs and metals at the sump from the SSI (Geraghty & Miller 1995):

Analyte	Units	Maximum Soil Concentration (closure samples)
<i>VOCs</i>		
Trichloroethene (TCE)	mg/kg	3.5
1,1,1-Trichloroethane (TCA)	mg/kg	2.0
1,1-Dichloroethene (DCE)	mg/kg	<1.8
1,1-Dichloroethane (DCA)	mg/kg	<1.8
<i>Metals</i>		
Cadmium	mg/kg	24
Chromium	mg/kg	103
Lead	mg/kg	*
Selenium	mg/kg	*

Note:

* – Data is missing from report, but Geraghty & Miller 1995 states that concentrations were detected below regulatory limits.

mg/kg – milligrams per kilogram (ppm)

VOC – volatile organic compounds

To meet New York City commercial use criteria, additional remediation at the site is required. The NYSDEC approved a Remedial Action Work Plan (RAWP) in August 2010 that includes soil excavation to depths ranging from between 4 to 10 feet bgs. Additionally, the RAWP includes monitoring of residual groundwater contamination to ensure the natural attenuation of COPCs at the site will ultimately meet NYSDEC standards. Potential exposures to occupants from soil vapor intrusion (SVI) in the new building (proposed in 2010) will be mitigated via installation of a vapor barrier and ventilated subsurface parking garage. Institutional controls (i.e., environmental easement) will be implemented to restrict the use of groundwater for use as potable water without necessary treatment (NYSDEC 2010). These additional groundwater and air monitoring requirements are described further in Sections 9.2 and 9.5.

9.1.2 Soil Vapor Investigations

In 2003, a RAP was implemented to evaluate soil and groundwater contaminant concentrations at the site. Based on the results of the remedial alternative evaluation, an AS/SVE was selected as the remedy to remove VOCs from soil and groundwater at the site. In June 2003, a soil gas survey was conducted at the site at approximate 50-foot intervals along the perimeter of the site. TCA was detected in ten samples from 76 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) to 8,700 $\mu\text{g}/\text{m}^3$. TCE was also detected in the ten samples, ranging from 25 $\mu\text{g}/\text{m}^3$ to 31,000 $\mu\text{g}/\text{m}^3$. Tetrachloroethene was detected in nine samples at concentrations ranging from 8.1 $\mu\text{g}/\text{m}^3$ to 4,300 $\mu\text{g}/\text{m}^3$ (Gannett Fleming 2006).

In 2006, a soil vapor investigation was conducted to supplement existing soil and groundwater data from 2003. The results of the investigation indicated that the presence of aromatic hydrocarbons, halogenated, and non-halogenated compounds present in the soil vapor samples suggest an off-site unidentified source contributing to VOC concentrations in soil vapor. COPCs, including tetrachloroethene, TCE, and TCA were not detected in a majority of the samples, with the highest total concentration of tetrachloroethene found in the vicinity of the groundwater plume downgradient of the site (Gannett Fleming 2006). In 2010, during the development of the RAWP for the planned redevelopment of the site, a SVI investigation was included. Dvirka and Bartilucci Consulting Engineers (D&B) completed the SVI at the site in 2010 (D&B 2010). Based on the results of this investigation,

NYSDEC concluded that all potential SVI pathways on- and off-site have been evaluated and no further sampling or action is warranted related to SVI (Cozzy 2010). The RAWP remedy decision states that potential exposures to occupants from soil vapor intrusion in the new building will be mitigated via installation of a vapor barrier and ventilated subsurface parking garage. In August 2010, NYSDEC approved the RAWP stating the selected remedy is protective of human health and the environment and complies with state requirements (NYSDEC 2010). Attachment 11 shows the soil vapor study sample locations.

9.1.3 Soil Summary

COPCs, including chlorinated VOCs and metals, were present in site subsurface soil samples at concentrations greater than NYSDEC regulatory limits. Several remedial activities have been performed including the 1991 building decommissioning and excavation, the 1993 IRM, and the 1994 Phase III investigation and excavation in 1994. Recent plans for redevelopment at the site triggered NYSDEC requirements to excavate residual VOC contaminated sediments from the site to meet New York City commercial use criteria. Proposed excavation activities would range between 4 to 10 feet bgs (NYSDEC 2010).

9.2 Groundwater

Groundwater Investigations

☒ Yes ☐ No

NAPL Presence (Historical & Current)

☐ Yes ☒ No

Dissolved COPC Plumes

☒ Yes ☐ No

Visual Seep Sample Data

☐ Yes ☐ No ☒ Not Applicable

9.2.1 Groundwater Investigations

Several groundwater investigations have been conducted on-site between 1987 and 2010. In 1987, three monitoring wells were installed as part of a subsurface investigation. Elevated levels of TCE (1,100 µg/l) were found in groundwater at the site. Subsequent groundwater samples collected between 1987 and 1989 indicated elevated levels of TCE, TCA, DCE, and DCA above NYSDEC Division Guidance Values in groundwater. A Phase II Investigation was conducted at the site per a Consent Order from NYSDEC in 1992 to test and monitor soils and groundwater at the site. Samples of groundwater at the site indicated exceedances in VOCs, chromium, and lead. The VOC plume was documented to extend from the

northeast portion of the site downgradient to the southwest. Wells in the hydraulically upgradient area at the northeast portion of the site were not impacted by VOCs from the site. The investigation revealed the source of the VOC plume to be the main sump inside the building. The source of VOC contamination was believed to originate from past discharges of liquid chemicals and waste into the sump (Levco Woodwork Joint Venture 2002). An IRM was implemented in 1993 to remove impacted material from the sump (Levco Woodwork Joint Venture 2002).

In 1994, a SSI was conducted following remediation of the sump area. Three soil borings were analyzed and converted into monitoring wells. Several monitoring wells were analyzed for VOCs and total and dissolved metals. VOC concentrations exceeding NYSDEC Guidance Values were documented to be relatively shallow in the water table. Metals exceeding NYSDEC Guidance Values at the sump were not determined to be a contaminant of concern in the groundwater both on and offsite because dissolved metals were isolated in the vicinity of the former sump only. Following the SSI, NYSDEC agreed that no further on- or off-site investigation was warranted and that monitoring for natural attenuation of VOCs in the water table was required (Levco Woodwork Joint Venture 2002). Attachment 8 and Attachments 9 and 10 show concentrations of metals and VOCs in groundwater from 1994 and 1995 investigations.

Subsequent monitoring occurred at the site on a semi-annual basis, beginning in 1996 and are ongoing at the site. In 2002, a Remedial Action Plan (RAP) was implemented in order to evaluate residual VOCs in the groundwater at the site. It was concluded that natural attenuation was limited due to insufficient biological activity and the low dispersive characteristics of site hydrogeology (Levco Woodwork Joint Venture 2002). In 2002, the site was registered under a Voluntary Cleanup Agreement (VCA; Voluntary Cleanup Program [VCP] No. V00600) with NYSDEC to address remaining contamination of groundwater (NYSDEC 2010a).

In 2003, an AS/SVE was installed at the site as part of the RAP as the selected remedy to remove VOCs from soil and groundwater. In 2005, the AS/SVE was still operating and performance monitoring indicated that VOCs were being removed from groundwater, soil, and soil vapor beneath the site (Gannett Fleming 2006).

In 2008, a Remedial Action Status Report indicated that exceedances for TCE were present in 4 of the monitoring wells (MW-103, MW-341S, MW-350, and MW-403) and exceedances for cis-1,2-dichloroethene and Tetrachloroethene were present in MW-350, above NYSDEC Guidance Values (Gannett Fleming 2008). The groundwater plume is limited to the central portion of the site between 36th and 37th Street as shown in Attachment 10 (NYSDEC 1995). Groundwater flows southeast in toward East River, which is approximately 1.1 miles from the site.

Results of groundwater sampling maximum concentrations are summarized in the following table:

Analyte	Units	Maximum Groundwater Concentration (1988) ¹	Maximum Groundwater Concentration (1994) ²	Maximum Groundwater Concentration (2007) ³
Trichloroethene (TCE)	µg/L	1,100	550	270
1,1,1-Trichloroethane (TCA)	µg/L	1,200	64	--
1,1-Dichloroethene (DCE)	µg/L	180	11	--
1,1-Dichloroethane (DCA)	µg/L	410	120	--
cis-1,2-dichloroethene	µg/L	--	--	6.1
Tetrachloroethene	µg/L	--	--	5
Cadmium	mg/kg	--	7.490	--
Chromium	mg/kg	--	0.631	--
Lead	mg/kg	--	1.780	--
Selenium	mg/kg	--	0.0058	--

Note:

1 – Data summarized from Geraghty & Miller 1995.

2 – Data summarized from NYSDEC 1995 (see also: Attachment 9).

3 – Data summarized from Gannett Fleming 2008.

µg/L – micrograms per liter (ppb)

mg/kg – milligrams per kilogram (ppm)

9.2.2 Groundwater Summary

Groundwater investigations conducted on-site between 1987 and 2010 have indicated elevated concentrations of metals and chlorinated VOCs in groundwater at the site. The most recent monitoring report available for review indicate that TCE, cis-1,2-

dichloroethene, and Tetrachloroethene are still present in the groundwater at the site at concentrations exceeding NYSDEC Guidance Values (Gannett Fleming 2008). Groundwater at the site flows southwest to the East River, which is approximately 1.1 miles away. Therefore, groundwater is not a complete transport pathway to Newtown Creek.

9.3 Surface Water

Surface Water Investigation

☐ Yes ☒ No

SPDES Permit (Current or Past)

☐ Yes ☒ No

Industrial Wastewater Discharge Permit (Current or Past)

☐ Yes ☒ No

Stormwater Data

☐ Yes ☒ No

Catch Basin Solids Data

☐ Yes ☒ No

Wastewater Data

☐ Yes ☒ No

9.3.1 Stormwater and Wastewater Systems

This site is within the Bowery Bay WPCP sewershed (NYCDEP 2007). No further information regarding on-site stormwater or wastewater infrastructure and management was identified in documents available for review.

9.4 Sediment

Creek Sediment Data

☐ Yes ☐ No ☒ Not Applicable

Information regarding on-site sediment investigations was not identified in documents available for review.

9.5 Air

Air Permit

☐ Yes ☒ No

Air Data

☒ Yes ☒ No

9.5.1 Air Data

An AS/SVE system installed on the site in 2003 to address elevated levels of VOCs found in soil and groundwater at the site (Gannett Fleming 2006). In 2010, the AS/SVE system was

deemed ineffective and was discontinued (Cozzy 2010). Section 10.3 contains more information regarding the air remediation history for the site.

10 REMEDIATION HISTORY (INTERIM REMEDIAL MEASURES AND OTHER CLEANUPS)

10.1 Soil Cleanup

Between September and November 1993, an IRM was implemented to remove contaminated soil from the concrete sump at the site. In October 1994, a Phase III excavation was conducted removing approximately 14 cubic yards of contaminated soil. In November 1994, the sump was backfilled with clean fill and all associated sump piping was properly sealed (Levco Woodwork Joint Venture 2002). In May 1996, the site was de-listed from the Registry in response to the conclusion of the IRM and investigation activities.

In August 2010, NYSDEC approved a RAWP stating the selected remedy is protective of human health and the environment and complies with state requirements (NYSDEC 2010). As part of this remedy, some soil excavation would occur above the water table (between 4 and 10 feet bgs) and residual groundwater contamination will be monitored to ensure the natural attenuation of COPCs at the site, until NYSDEC standards are achieved (NYSDEC 2010). The remedy also includes the installation of vapor barrier in new building and construction of ventilated parking garage. Institutional controls (i.e., environmental easement) will also be implemented as part of the remedy to restrict the use of groundwater for use as potable water without necessary treatment (NYSDEC 2010).

10.2 Vadose Soil Cleanup

An AS/SVE system installed on the site in 2003 to address elevated levels of VOCs found in vadose soil at the site (Gannett Fleming 2006). Based on data from the AS/SVE, the system was expanded along the perimeter of the site, adding two wells to address levels of VOCs found in soil vapor along the western boundary of the site (Gannett Fleming 2006). These SVE were placed in locations such as to capture the VOCs in the soil vapor and control their migration into adjacent structures or beneath the adjacent street (Gannett Fleming 2006). In 2010, the AS/SVE system was deemed ineffective and was discontinued (Cozzy 2010).

10.3 Groundwater Cleanup

During the Phase II investigation at the site in 1992, soils near the sump appeared to be the source of observed impacts to groundwater at the site (Levco Woodwork Joint Venture 2002). An IRM was implemented in 1993 and Phase II excavation in 1994 to remediate impacted soils at the sump (as described in Sections 9.2 and 10.1).

The 2008 Remedial Action Status Report showed exceedances for VOCs, including TCE, cis-1,2-dichloroethene, and Tetrachloroethene, in groundwater at concentrations above the NYSDEC Guidance Values of 5.0 µg/L. Groundwater samples were analyzed for VOC via the U.S. Environmental Protection Agency (USEPA) method 8260 (Gannett Fleming 2008).

10.4 Other Cleanup

The former one-story brick building on the site was decommissioned in 1991. The building was constructed on a slab of concrete except for a 500 square foot basement at the northwestern end of the building. The basement included a boiler and AST used to store fuel oil. Approximately 36,288 gallons of hazardous waste liquids, 38 lab-packs of small containers holding hazardous waste (less than one gallon each), and 90 cubic yards of hazardous waste solids (i.e., woodchips, wood and debris) were all removed at this time. The equipment and interior components were also removed and disposed of at an off-site facility (Levco Woodwork Joint Venture 2002).

11 BIBLIOGRAPHY/INFORMATION SOURCES

Applied Environmental (Applied Environmental, Inc.), 1993. *Interim Remedial Measures Plan*. Levco-Woodwork Joint Venture Site, 34 – 11 36th Street, Long Island City, Queens County, New York. Prepared for Farrell, Fritz, Caemmerer, Cleary, Barnosky & Armentano, P.C. August 1993.

Chamber of Commerce (Chamber of Commerce, Borough of Queens), 1950. *Queensborough, Membership Directory*. Volume 36. June and July 1950.

Chamber of Commerce, 1969. *Queensborough, Membership Directory*. Volume 55. 1969.

Cozzy (NYSDEC), 2010. Memorandum to: Sal Ervolina, Division of Environmental Remediation. Regarding: Soil Vapor Intrusion Evaluation Determination,

- Investigation Complete – No Actions Recommended, Legacy Site: Levco Metals – Off-site, Site No. 241009 and V00600. July 16, 2010.
- D&B (Dvirka and Bartilucci Consulting Engineers), 2010. *Off-Site Soil Vapor Study*. Former Levco Metals Finishing Site, Astoria, New York, NYSDEC Voluntary Cleanup Site No. V00600-2. Prepared for the New York State Department of Environmental Conservation. July 2010.
- EDR (Environmental Data Resources, Inc.), 2010. EDR DataMap™ Environmental Atlas™ for “Newton Creek Queens, New York.” November 4, 2010.
- Gannett Fleming, 2006. *Soil Vapor Intrusion Evaluation*. Former Levco Metal Finishing Site, Site No. V00600-2. Letter to: Vadim Brevdo, New York State Department of Environmental Conservation. File #39894.001. Long Island City, New York. February 22, 2006
- Gannett Fleming, 2008. *Remedial Action Status Report (Draft)*. Former Levco Metal Finishing, 34-11 36th Street, Long Island City, New York, Voluntary Cleanup Site No. V-00600-2. Letter to: Vadim Brevdo, New York State Department of Environmental Conservation. February 7, 2008.
- Geraghty & Miller (Geraghty & Miller, Inc.), 1995. *Interim Remedial Measure and Supplemental Site Investigation Report*. Levco Metal Finishing Site, Astoria, New York, NYSDEC ID No. 2-41-009. Prepared for Levco-Woodwork Joint Venture. February 1995.
- Levco Woodwork Joint Venture, 2002. New York State Department of Environmental Conservation Volunteer Cleanup Program Application. Former Levco Metals Finishing Site, Astoria, New York. July 18, 2002.
- Misut and Monti (Misut, P.E., and Monti, J. Jr.), 1999. *Simulation of Ground-Water Flow and Pumpage in Kings and Queens Counties, Long Island, New York*. U.S. Geological Survey. Water-Resources Investigations Report 98-4071. 1999.
- NYCDP (New York City Department of City Planning, 2011a. ZoLA Zoning and Land Use Mapping Application. Updated: November 28, 2011. Accessed November 28, 2011. Available from: <http://gis.nyc.gov/doitt/nycitymap/template?applicationName=ZOLA>

NYCDGP, 2011b. Article IV: Manufacturing District Regulations. Updated: September 21, 2011. Accessed November 28, 2011.

Available from: <http://www.nyc.gov/html/dcp/html/zone/zonetext.shtml>

NYSDEC (New York State Department of Environmental Conservation), 1995. *Proposed Remedial Action Plan*. Prepared for the Levco Metal Finishing Site, Astoria, New York. Site Number 2-41-009. December 28, 1995.

NYSDEC, 1996. *Record of Decision*. Levco Metals Property Site, Queens County. Site Number 2-41-009. Prepared by the New York State Department of Environmental Conservation, Division of Hazardous Waste Remediation. March 1996.

NYSDEC, 2003a. Fact Sheet: Remedial Action Plan Proposed for the Former Metals Finishing Site. Prepared by NYSDEC for the former Levco Metals Finishing Site No. V-00600-2; Astoria, New York; October 2003a.

NYSDEC (New York State Department of Environmental Conservation), 2003b. ENB – Region 2 Notices, Public Notice, Voluntary Cleanup. October 22, 2003.

Available from: <http://www.dec.ny.gov/enb2003/20031022/not2.html>

NYSDEC, 2010. VCP/BCP Remedial Action Work Plan Approval Routing Slip and Site Briefing. Levco Site, Voluntary Cleanup Site Code No. V00600. NYSDEC Division of Environmental Remediation. September 2, 2010.

NYSDEC, 2012. Environmental Remediation Databases. Accessed March 22, 2012.

Available from: <http://www.dec.ny.gov/cfm/externalapps/derexternal/>

Sanborn (Sanborn Map Company), 1917. *Insurance Maps of the Borough of Queens, City of New York*. Volume 1: Sheet 90. Original 1911, revised 1917.

Sanborn, 1943. *Insurance Maps of the Borough of Queens, City of New York*. Volume 1: Sheet 90. Original 1925, revised 1943.

State of New York, 1983. *New York Industrial Directory Guide, Queens County, Long Island City*. 1983.

12 ATTACHMENTS

Figures

Figure 1 Site Vicinity Map: Levco Metals Property

Tables

Table 1 Potential Areas of Concern and Transport Pathways Assessment -
Levco Metals Property

Supplemental Attachments

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Attachment 2 Figure 2: Site Plan (Levco Woodwork Joint Venture 2002)
Attachment 3 Figure 3-1: Schematic of Sump Excavation and Closure Sample
Locations (Geraghty & Miller 1995)
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Section Lines (Geraghty & Miller 1995)
Attachment 5 Figure 4-1: Cross Section A-A' (Geraghty & Miller 1995)
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Table 1
Potential Areas of Concern and Transport Pathways Assessment – Levco Metals Property

Potential Areas of Concern	Media Impacted					COPCs													Potential Complete Pathway							
Description of Areas of Concern	Surface Soil	Subsurface Soil	Groundwater	Catch Basin Solids	Creek Sediment	TPH			VOCs			SVOCs	PAHs	Phthalates	Phenolics	Metals	PCBs	Herbicides and Pesticides	Dioxins/Furans	Overland Transport	Groundwater	Direct Discharge – Overwater	Direct Discharge – Storm/Wastewater	Discharge to Sewer/CSO	Bank Erosion	Air Releases
						Gasoline-Range	Diesel – Range	Heavier – Range	Petroleum Related (e.g., BTEX)	VOCs	Chlorinated VOCs															
Equipment and areas used in former site operations (including two storage warehouses and two gas tanks)	?	?	?	?	?	?	?	?	?	√	?	?	?	?	?	?	?	?	?	--	?	--	?	?	--	?
Former metal finishing practices and operations (including sulfuric anodizing, chromic, hard coating, spraying, polishing and plating, and a concrete sump area)	√	√	√	?	?	?	?	?	?	√	√	?	?	?	?	√	?	?	?	--	?	--	?	?	--	?
Spill	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	--	?	--	?	?	--	?
Former AST for discarded oil	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	--	?	--	?	?	--	?
UST	?	?	?	?	?	?	√	?	√	√	?	√	√	?	?	?	?	?	?	--	?	--	?	?	--	?

Notes:

√ – COPCs are/were present in areas of concern having a current or historical pathway that is determined to be complete or potentially complete.

? – There is not enough information to determine if COPC is/was present in area of concern or if pathway is complete.

-- – Current or historical pathway has been investigated and shown to be not present or incomplete.

AST – aboveground storage tank

BTEX – benzene, toluene, ethylbenzene, and xylenes

COPC – constituents of potential concern

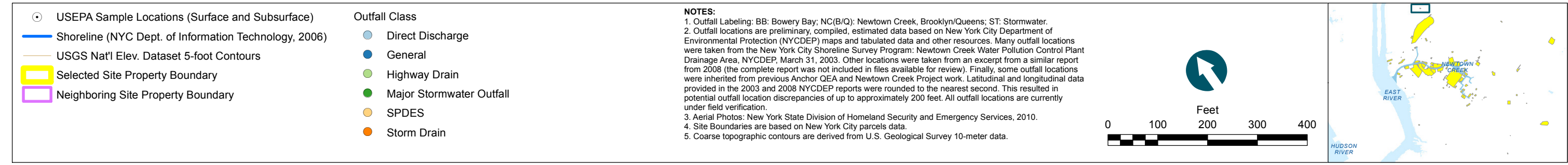
CSO – combined sewer overflows PAHs – polycyclic aromatic hydrocarbons

PCB – polychlorinated biphenyl

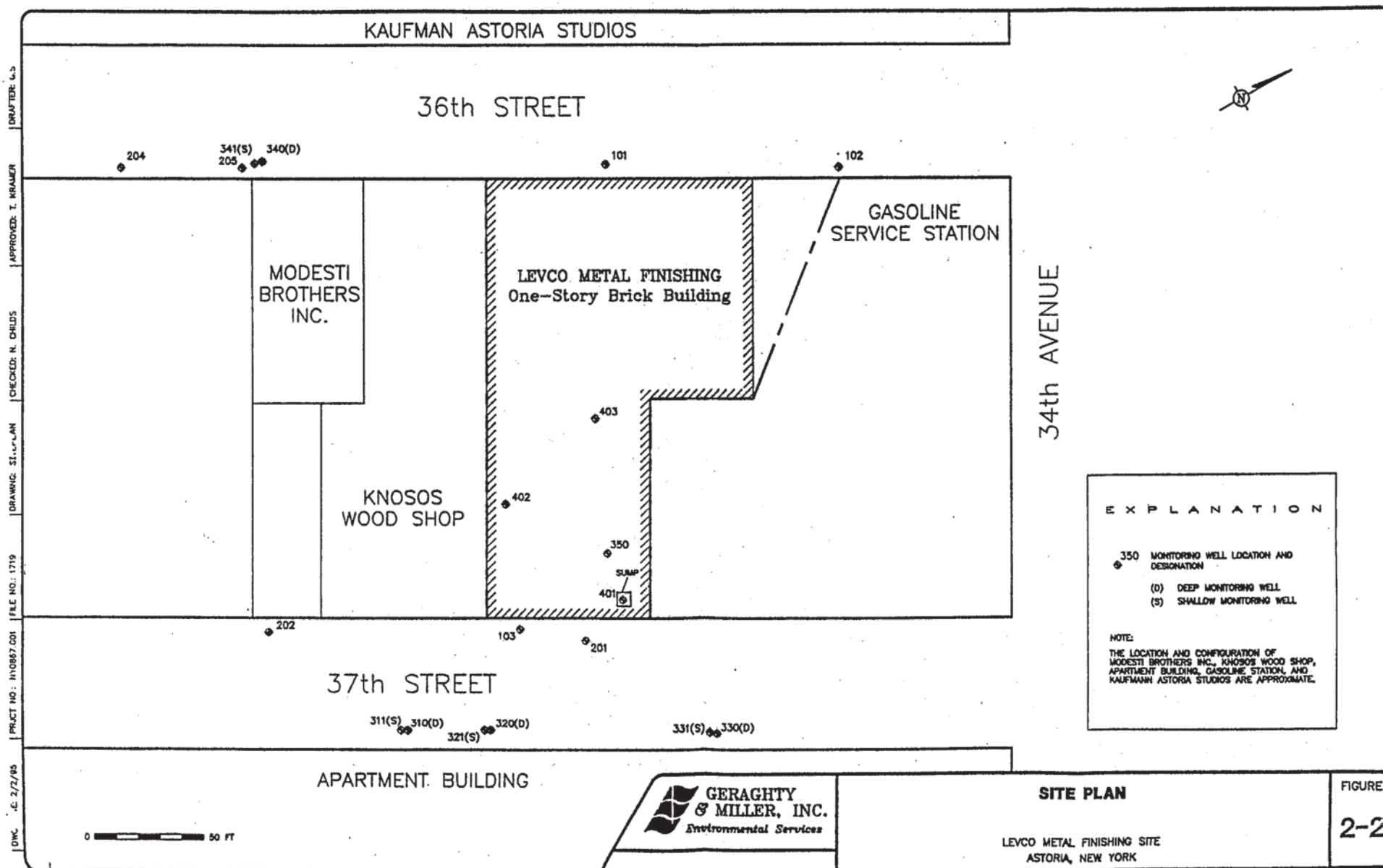
SVOC – semi-volatile organic compounds
TPH – total petroleum hydrocarbons
VOC – volatile organic compounds

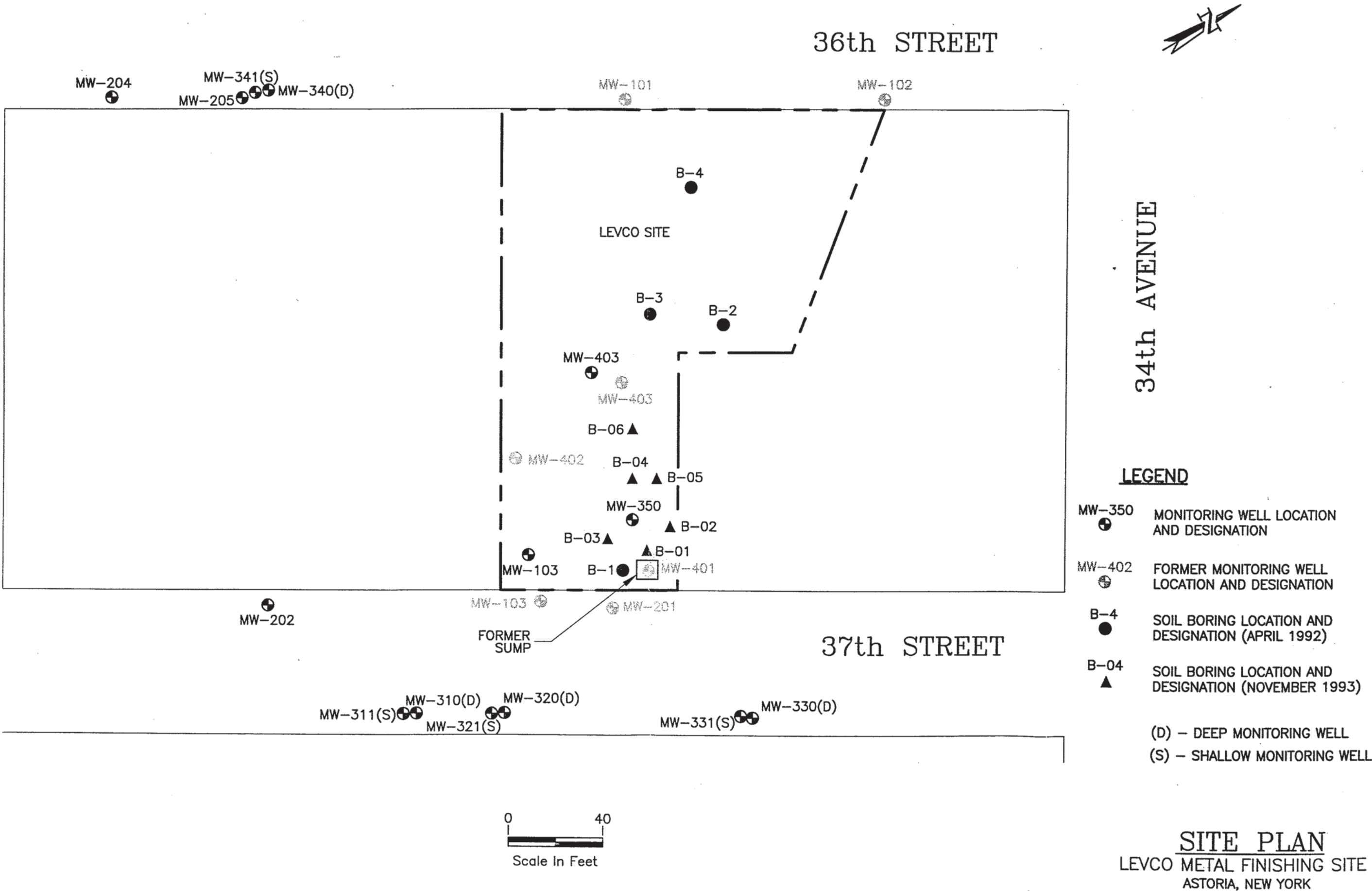
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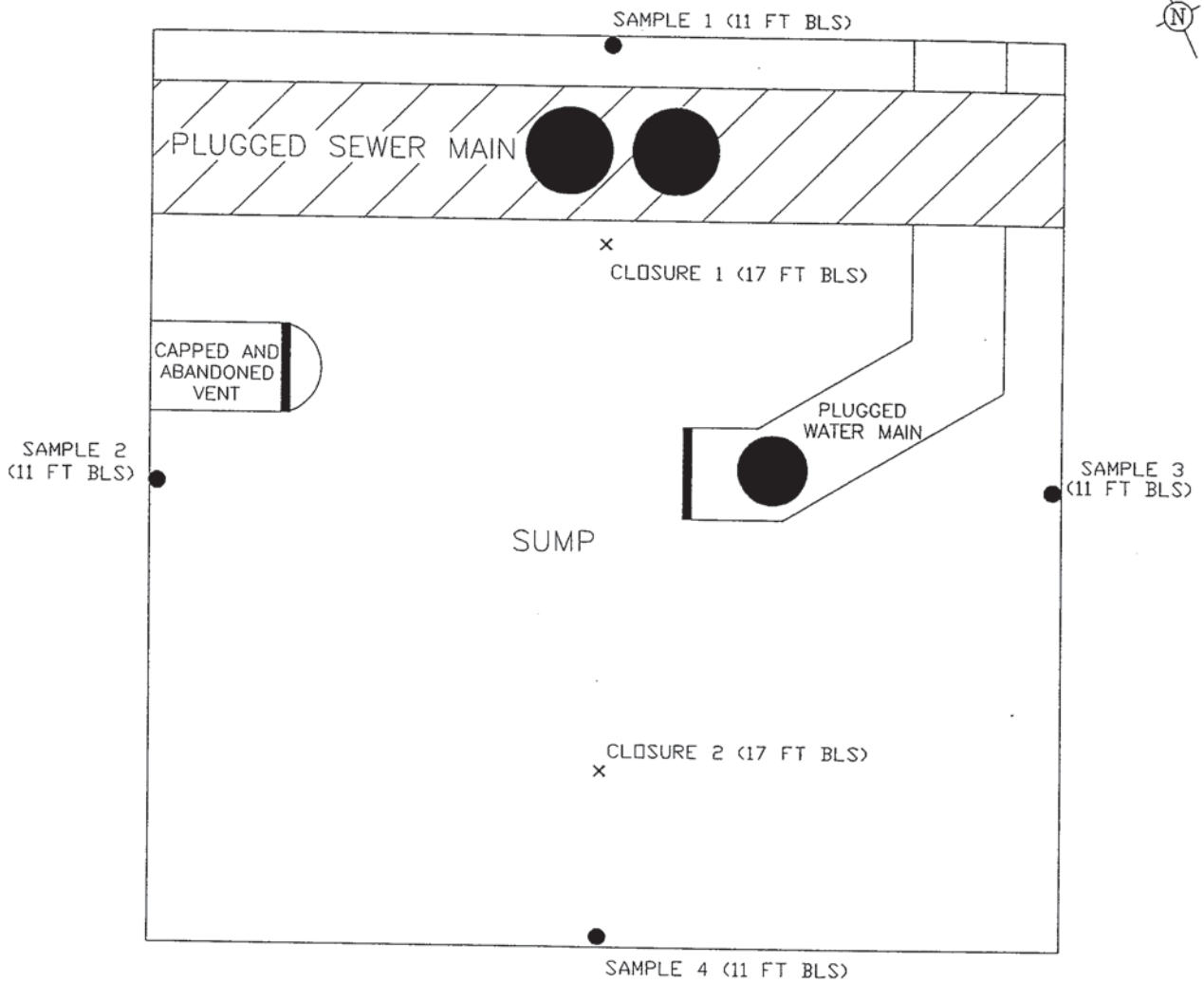


SUPPLEMENTAL ATTACHMENTS





DWG DATE: 2/3/95 | PRJCT NO.: NY0867001 | FILE NO.: 1719 | DRAWING: CLDSSAMP | CHECKED: N. CHILDS | APPROVED: N. CHILDS | DRAFTER: V.C./G.S.



EXPLANATION

- SAMPLE 1 (11 FT BLS) ● LOCATION, DESIGNATION, AND DEPTH OF SIDEWELL CLOSURE SAMPLE
- CLOSURE 1 (17 FT BLS) x LOCATION, DESIGNATION, AND DEPTH OF BOTTOM CLOSURE SAMPLE
- FT BLS FEET BELOW LAND SURFACE

0  1 FOOT

DRAFTER: G.S.

APPROVED: T. KRAMER

CHECKED: N. CHILDS

DRAWING: STEEL-B

FILE NO.: 1719

PRJCT NO.: NY0867.001

DATE: 2/2/95



36th STREET

34th AVENUE

37th STREET

LEVCO METAL FINISHING
One-Story Brick Building

EXPLANATION

350 MONITORING WELL LOCATION AND DESIGNATION

(D) DEEP MONITORING WELL
(S) SHALLOW MONITORING WELL

A—A' LINE OF HYDROGEOLOGIC CROSS SECTION

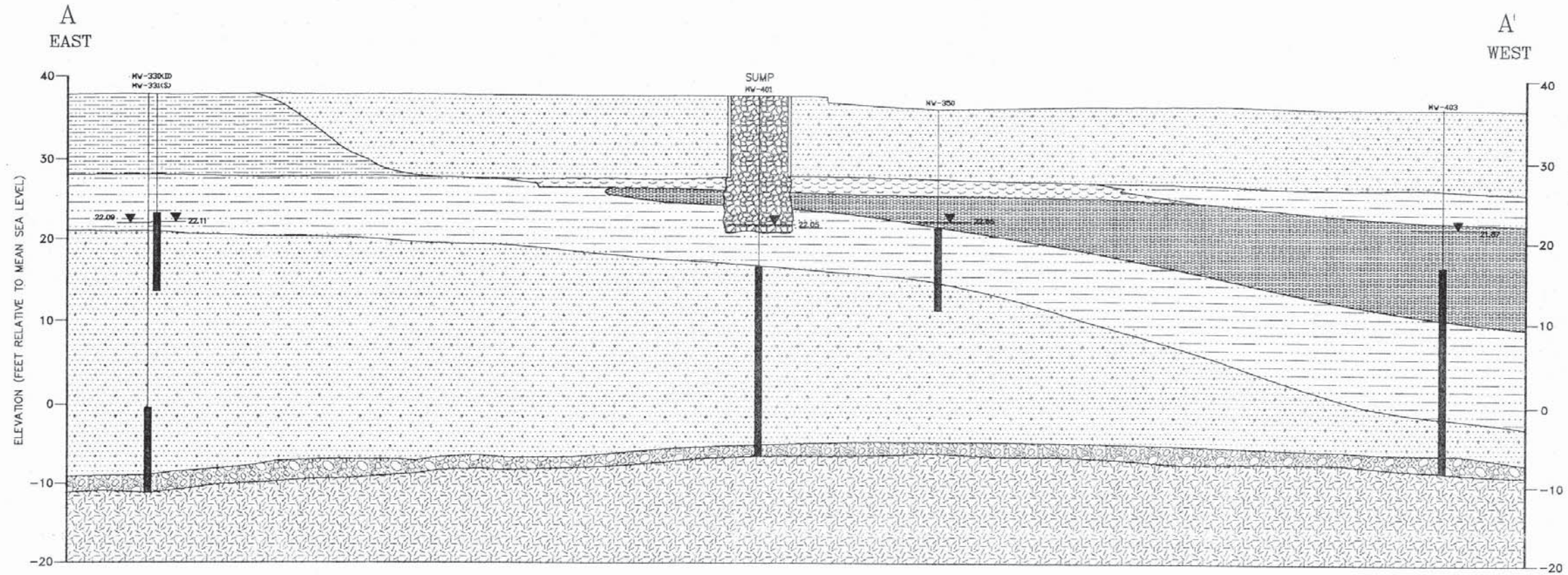
0 50 FT

GERAGHTY
& MILLER, INC.
Environmental Services

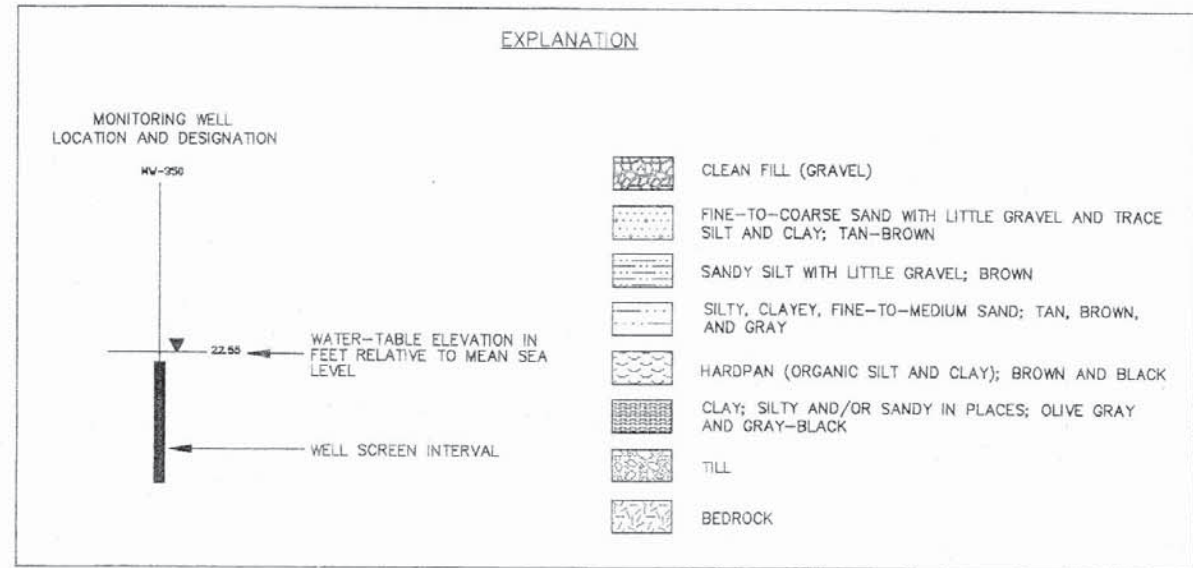
MONITORING WELL LOCATIONS AND
HYDROGEOLOGIC CROSS SECTION LINES

LEVCO METAL FINISHING SITE
ASTORIA, NEW YORK

FIGURE
3-2



0 10 FEET



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PROJECT NO.: NY0867001	FILE NO:
DRAWING: XSEC-AA	PLOT SIZE: 11x17
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CHECKED BY: N. CHILDS	DATE:
APPROVED BY: N. CHILDS	DATE:

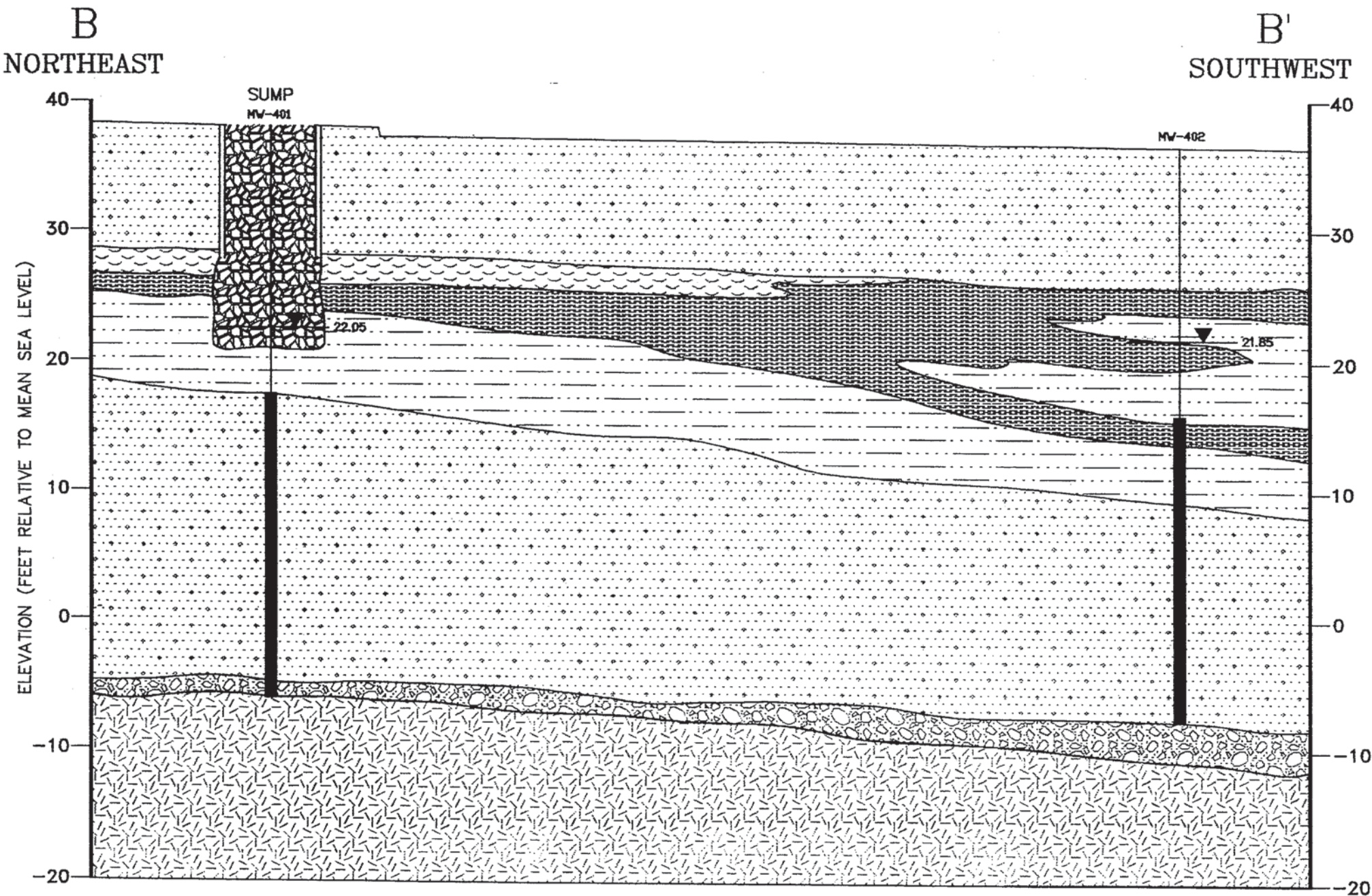
CROSS SECTION A-A'

LEVCO METAL FINISHING SITE
ASTORIA, NEW YORK

FIGURE

4-1

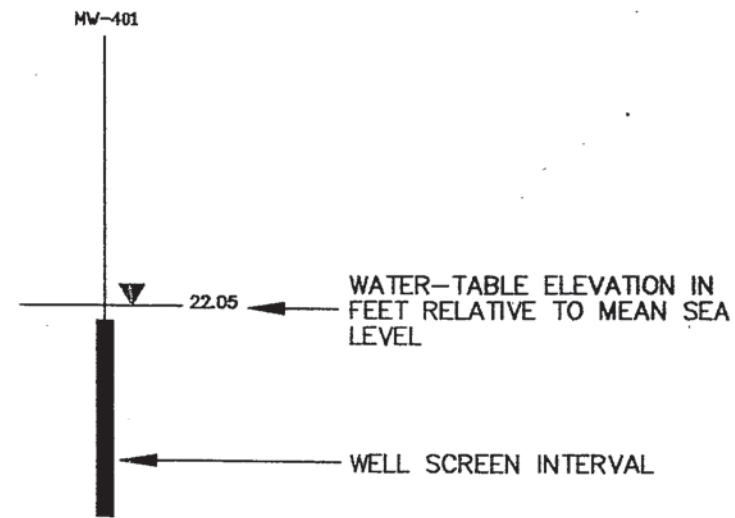
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DATE: 2/2/95



EXPLANATION

- CLEAN FILL (GRAVEL)
- FINE-TO-COARSE SAND WITH LITTLE GRAVEL AND TRACE SILT AND CLAY; TAN-BROWN
- SANDY SILT WITH LITTLE GRAVEL; BROWN
- SILTY, CLAYEY FINE-TO-MEDIUM SAND; TAN, BROWN, AND GRAY
- HARDPAN (ORGANIC SILT AND CLAY); BROWN AND BLACK
- CLAY; SILTY AND/OR SANDY IN PLACES; OLIVE GRAY AND GRAY-BLACK
- TILL
- BEDROCK

MONITORING WELL LOCATION AND DESIGNATION

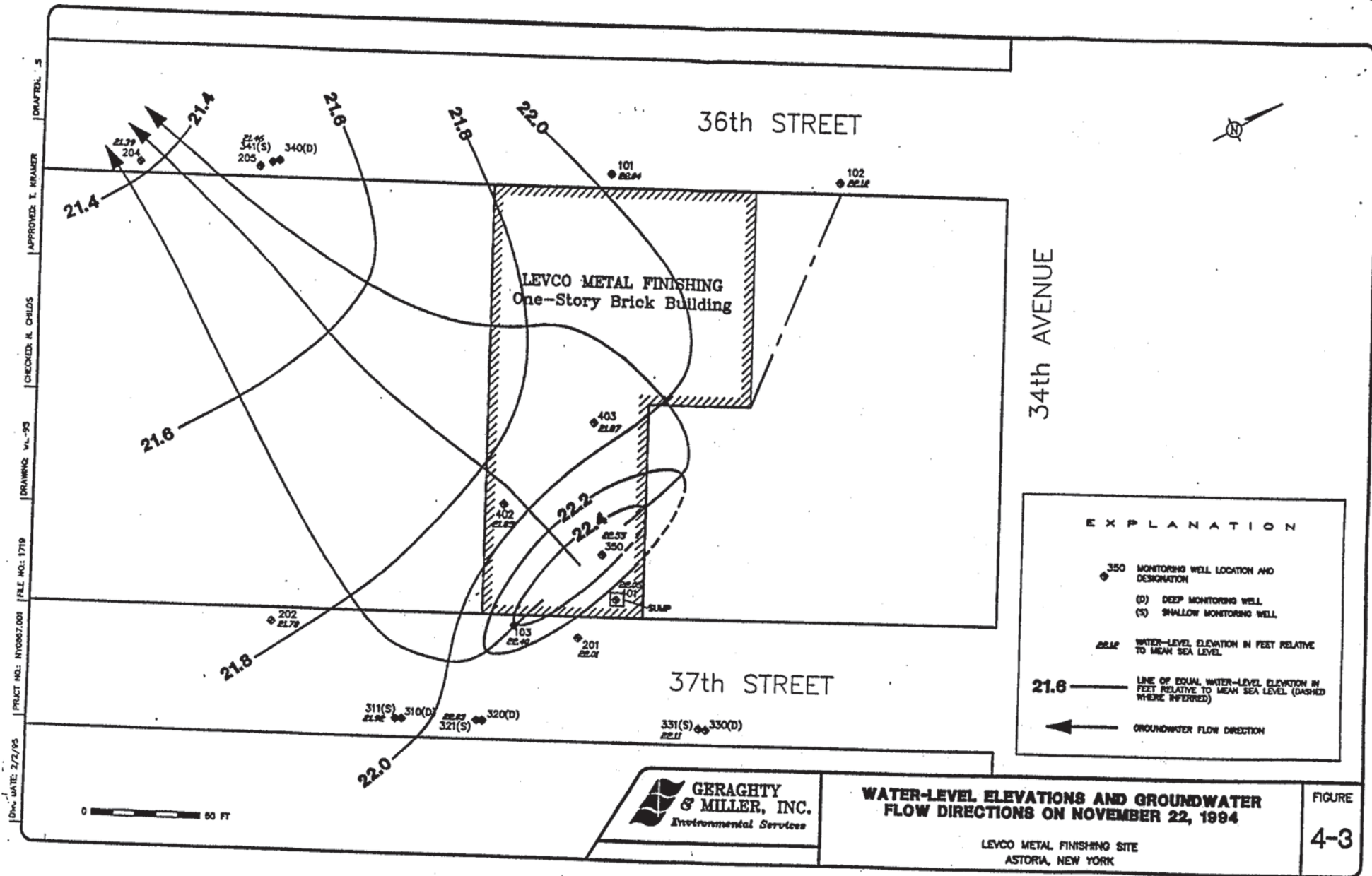


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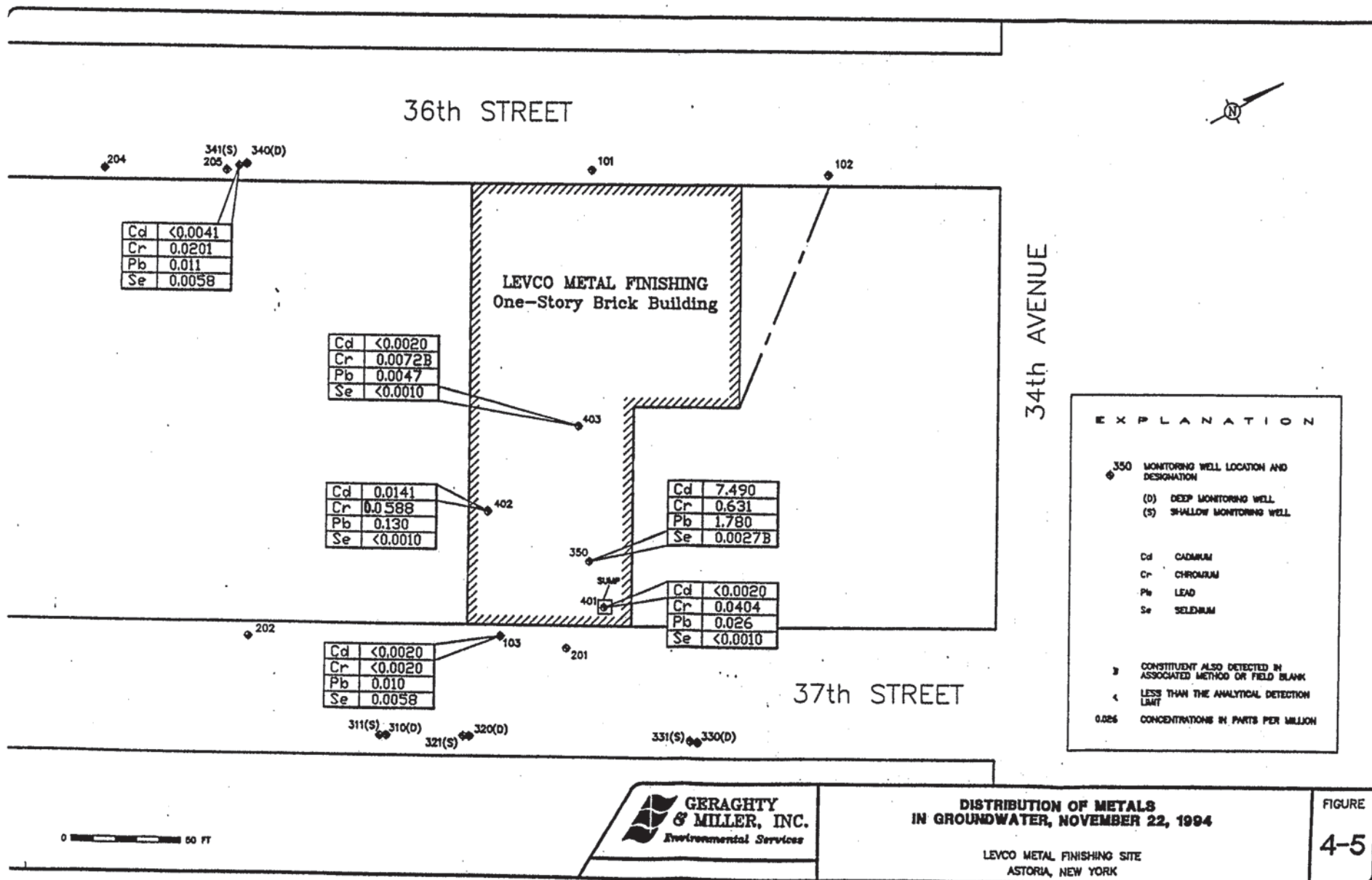
CROSS SECTION B-B'

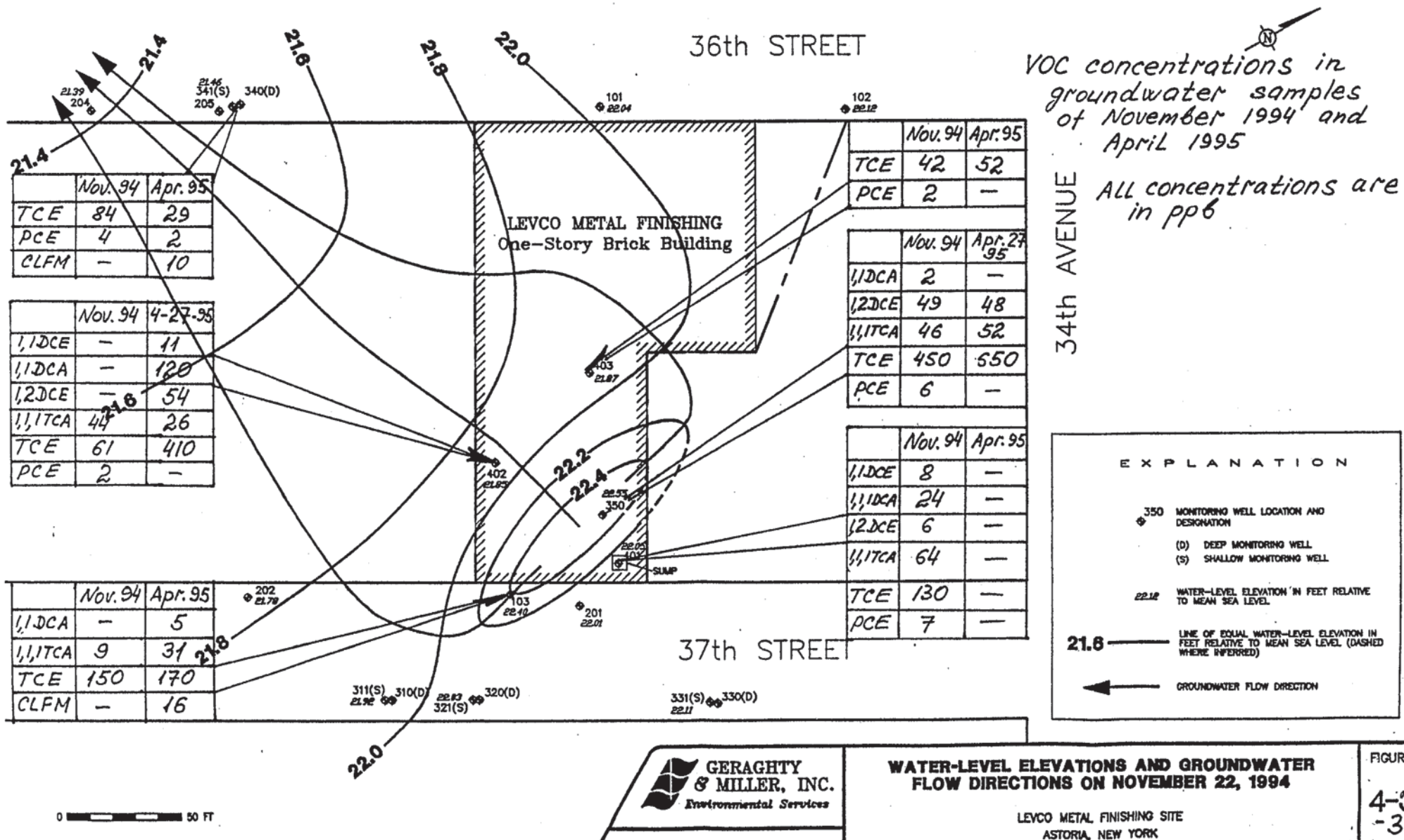
LEVCO METAL FINISHING SITE
ASTORIA, NEW YORK

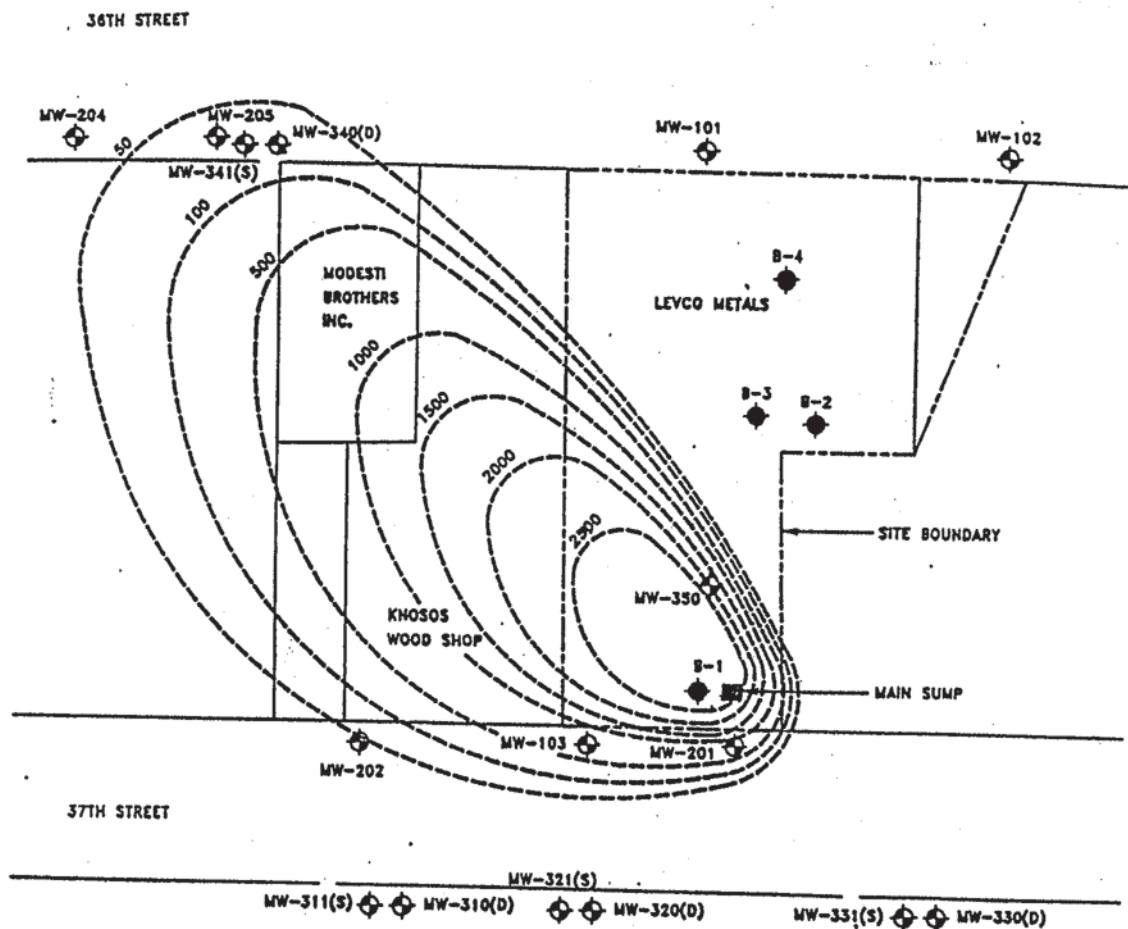


FIGURE

4-3







GROUNDWATER CONTAMINATION PLUME
TOTAL VOLATILE ORGANIC COMPOUNDS (PPB)

(As of April 1992 site conditions)

WELL NO.	TOTAL VOC'S
MW-103	885
MW-310(D)	7
MW-311(S)	4
MW-320(D)	11
MW-321(S)	0
MW-330(D)	12
MW-331(S)	6
MW-340(D)	49
MW-341(S)	68
MW-350	2670

TOTAL VOC'S MEASURED IN PARTS PER BILLION (PPB)
SAMPLE DATA REPRESENTS APRIL 1992 CONDITIONS

- = INFERRED CONTAMINATION PLUME
- B-# = SOIL BORING
- ⊕ MW-# = MONITORING WELL
- MW-# (S) = SHALLOW MONITORING WELL
- MW-# (D) = DEEP MONITORING WELL

NOTE: DRAWING NOT TO SCALE. ALL LOCATIONS ARE APPROXIMATE. DRAWING INTENDED FOR USE WITH CERTIFIED REPORT ONLY.

DWG. TITLE:

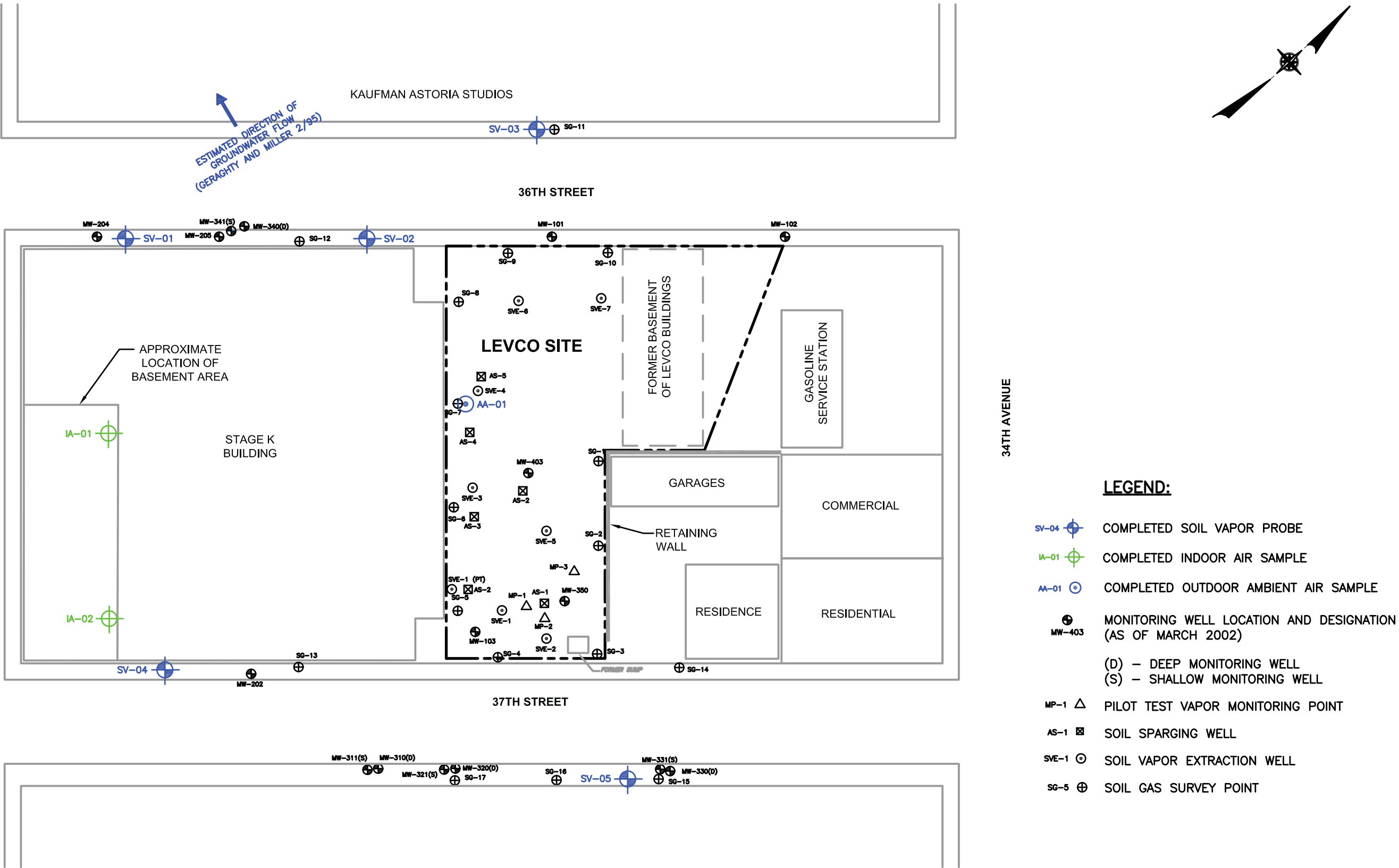
FIGURE 7

PROJECT NO: 110332

LEVCO/WOODWORK
JOINT VENTURE
LONG ISLAND CITY, NY

CERTIFIED

CERTIFIED ENGINEERING & TESTING COMPANY
ENVIRONMENTAL CONSULTANTS & LABORATORY SERVICES
25 MATTHEWSON DRIVE, WEYMOUTH, MA 02189
TELEPHONE: (617) 337-7887



FORMER LEVCO METALS FINISHING SITE
ASTORIA, NEW YORK
SOIL VAPOR STUDY
SAMPLE LOCATION MAP

FIGURE 2-1